

## CLAIMS:

1.

Audio processing arrangement comprising a plurality of audio sources generating input audio signals, processing means for deriving processed audio signals from the input audio signals, the audio processing arrangement comprising combining means for deriving a combined audio signal from the processed audio signals, characterized in that the audio processing arrangement comprises control means for controlling the processing means in order to maximize a power measure of the combined audio signal, and in that the control means are arranged for limiting a combined power gain measure of the processed audio signals to a predetermined value.

10

2.

Audio processing arrangement according to claim 1, characterized in that the processing means comprise scaling means for scaling the input audio signals with a scaling factor for obtaining the processed audio signal, said control means comprise further scaling means for deriving a plurality of scaled combined audio signals with a scaling factor corresponding to the scaling factor of the scaling means, and in that the control means are arranged for maximizing a power measure of the combined audio signal, and for limiting a combined power gain measure of the processed audio signals by minimizing a difference between the input audio signals and the scaled combined audio signals corresponding to said audio signals.

15

20

3.

Audio processing arrangement according to claim 1, characterized in that the processing means comprise a plurality of adjustable filters for deriving the processed audio signal, in that the control means comprise a plurality of further adjustable filters having a transfer function being the conjugate of the transfer function of the adjustable filters, said further adjustable filters being arranged for deriving from the combined audio signal filtered combined audio signals, and in that the control means are arranged for maximizing the power measure of the combined audio signal, and for restricting a combined power gain measure of the processed audio signals to a predetermined value by controlling the transfer functions of the adjustable filters and the further adjustable filters in order to minimize a difference

25

measure between the input audio signals and the filtered combined audio signal corresponding to said input audio signals.

4. Audio processing arrangement according to claim 2, characterized in that the  
5 audio processing arrangement comprises delay elements for compensating a delay difference of a common audio signal present in the input audio signals.

*a* *improvement dependent* 5. Audio processing arrangement according to ~~one or more of the previous claims~~, *claim 1*  
characterized in that the audio sources comprise a plurality of microphones, and in that the  
10 microphones are placed in a position such that their directionality patterns are substantially disjunct.

6. Audio processing arrangement according to claim 5, characterized in that the  
microphones are placed around a center position at angles being equal to 360 degrees divided  
15 by the number of microphones.

*a* 7. Audio processing arrangement according to ~~one of the claims 1, 2, 3 or 4~~, *claim 1*  
characterized in that the audio sources comprise a plurality of microphones being placed in a  
linear array.

20 8. Audio signal processing arrangement comprising a plurality of inputs for receiving input audio signals, processing means for deriving processed audio signals from the input audio signals, the audio processing arrangement comprising combining means for deriving a combined audio signal from the processed audio signals, characterized in that the  
25 audio processing arrangement comprises control means for controlling the processing means in order to maximize a power measure of the combined audio signal, and in that the control means are arranged for limiting a combined power gain measure of the processed audio signals to a predetermined value.

30 9. Audio signal processing arrangement according to claim 8, characterized in that the processing means comprise scaling means for scaling the input audio signals with a scaling factor for obtaining the processed audio signals, said control means comprise further scaling means for deriving a plurality of scaled combined audio signals with a scaling factor corresponding to the scaling factor of the scaling means, and in that the control means are

arranged for maximizing a power measure of the combined audio signal, and for limiting a combined power gain measure of the processed audio signals by minimizing a difference between the input audio signals and the scaled combined audio signals corresponding to said audio signals.

5

10.

Audio processing method comprising receiving a plurality of input audio signals from a plurality of audio sources, deriving processed audio signals from the input audio signals, deriving a combined audio signal from the processed audio signals, characterized in that the audio processing method comprises controlling the processing of the audio signals in order to maximize a power measure of the combined audio signal, and in that the method comprises controlling the processing for limiting a combined power gain measure of the processed audio signals to a predetermined value.

10